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Average Weekly Earnings, Australia methodology

Reference period November 2019

Released 20/02/2020

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Explanatory notes

Introduction

1 This release contains biannual estimates of Average Weekly Earnings (AWE) based on information obtained from a sample survey of employers.

Concepts, sources and methods

2 Descriptions of the underlying concepts of Australia's AWE statistics, and the sources and methods used in compiling these estimates, are presented in [Labour Statistics: Concepts, Sources and Methods](#) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.0.55.001>) (cat. no. 6102.0.55.001).

Reference period

3 AWE is produced for the June and December quarters. The reference period for the survey is the last pay period ending on or before the third Friday of the middle month of the reference quarter (i.e. May and November). Where a pay period is fortnightly or monthly,

etc., the employer is requested to report only one week's proportion.

Scope and coverage

4 All wage and salary earners who received pay for the reference period are represented in the AWE survey, except:

- members of the Australian permanent defence forces;
- employees of enterprises primarily engaged in agriculture, forestry and fishing;
- employees of private households;
- employees of overseas embassies, consulates, etc.;
- employees based outside Australia; and
- employees on workers' compensation who are not paid through the payroll.

5 Also excluded are the following persons who are not regarded as employees for the purposes of this survey:

- casual employees who did not receive pay during the reference period;
- employees on leave without pay who did not receive pay during the reference period;
- employees on strike, or stood down, who did not receive pay during the reference period;
- directors who are not paid a salary;
- proprietors/partners of unincorporated businesses;
- self-employed persons such as subcontractors, owner/drivers, consultants;
- persons paid solely by commission without a retainer; and
- employees paid under the Australian Government's Paid Parental Leave Scheme.

6 The sample for AWE, like most Australian Bureau of Statistics (ABS) business surveys, is selected from the ABS Business Register (ABSBR) which is primarily based on registrations to the Australian Taxation Office (ATO) Pay As You Go Withholding (PAYGW) scheme. The ABSBR is updated quarterly to take account of:

- new businesses;
- takeovers and mergers;
- changes in industry classification;
- changes in the number of employees;

- businesses which have ceased employing; and
- other general business changes.

7 The estimates include an allowance for the time it takes newly registered businesses to be added to the survey population.

8 Businesses which have ceased employing are identified when the ATO cancels their PAYGW registration. In addition, businesses which have not remitted under the PAYGW scheme for the previous five quarters are removed from the population.

Survey design

9 A sample of approximately 5,500 employer units is selected from the ABS Business Register to ensure adequate state, industry and sector representation. The sample is updated each survey period to reflect the changes described in paragraph 6. These changes arise from the emergence of new businesses, takeovers and mergers, changes to industry classification, changes in the number of employees, and businesses which have ceased operations. Such updating of the business register can contribute to movements in the AWE estimates.

10 Sample redesigns are undertaken periodically for all ABS business surveys to ensure the survey design continues to be optimal. The most recent sample redesign for the Survey of Average Weekly Earnings was implemented for the November 2017 release.

11 Prior to this, a sample redesign of the AWE survey was also implemented in August 2009 incorporating the [Australian and New Zealand Standard Industrial Classification \(ANZSIC\), 2006](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0>) (cat. no. 1292.0).

12 The statistical unit for the survey comprises all the activities of an employer in a particular state or territory based on the Type of Activity Unit. For further information on the statistical unit see paragraphs 19 to 35. Each statistical unit is classified to an industry which reflects the predominant activity of the business. The statistical units are stratified by state, sector, industry and employment size, and within each stratum, statistical units are selected with equal probability.

Industry classification

13 The statistics in this release are classified to industry in accordance with the [Australian and New Zealand Standard Industrial Classification \(ANZSIC\), 2006](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0>) (cat. no. 1292.0). This replaced the 1993 edition of ANZSIC in the August 2009 issue of this publication, which had been in use since 1994.

14 The 2006 edition of ANZSIC was developed to provide a more contemporary industrial classification system, taking into account issues such as changes in the structure and composition of the economy, changing user demands and compatibility with major international classification standards.

Survey frequency

15 Up until May 2012, Average Weekly Earnings was conducted on a quarterly basis. However, the frequency of the AWE survey is now biannual, with the May 2012 edition being the last quarterly issue and the November 2012 edition the first produced on a biannual basis. AWE data is now produced twice a year relating to the May and November reference periods only. Data is collected and released on the same basis as before for the May and November reference periods. For full details on the change in frequency, refer to the [Information Paper: Changes to Average Weekly Earnings, Australia \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.002\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.002) (cat. no. 6302.0.55.002).

16 As a result of the change in frequency, new seasonally adjusted and trend estimate series are produced (refer to paragraphs 60-70 below).

Impact of statistical changes implemented in August 2009

17 With effect from the August 2009 edition, this publication presents data on the basis of ANZSIC 2006. At this time, the ABS also implemented a sample redesign. The changes resulted in a shift in the level of the series from ANZSIC 1993 to ANZSIC 2006 estimates. The difference in the level of the two series was measured and backcast into the historical series to make a time series of estimates on an ANZSIC 2006 basis. Differences at the state, sector and Australia levels are generally insignificant and within released standard errors for each series.

18 Published industry series have been backcast and data from August 1994 to May 2009 are available on the basis of both editions of ANZSIC on the ABS website. More information about these changes can be found in the [Information Paper: Changes to Average Weekly Earnings, Australia, Aug 2009 \(https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/883673FA451F8436CA2579DF00122DB8?opendocument\)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/883673FA451F8436CA2579DF00122DB8?opendocument) (cat. no. 6302.0.55.002).

ABS economic units model

19 The Economic Units Model is used by the ABS to determine the structure of Australian businesses and other organisations. The model consists of:

- The Enterprise Group (EG)

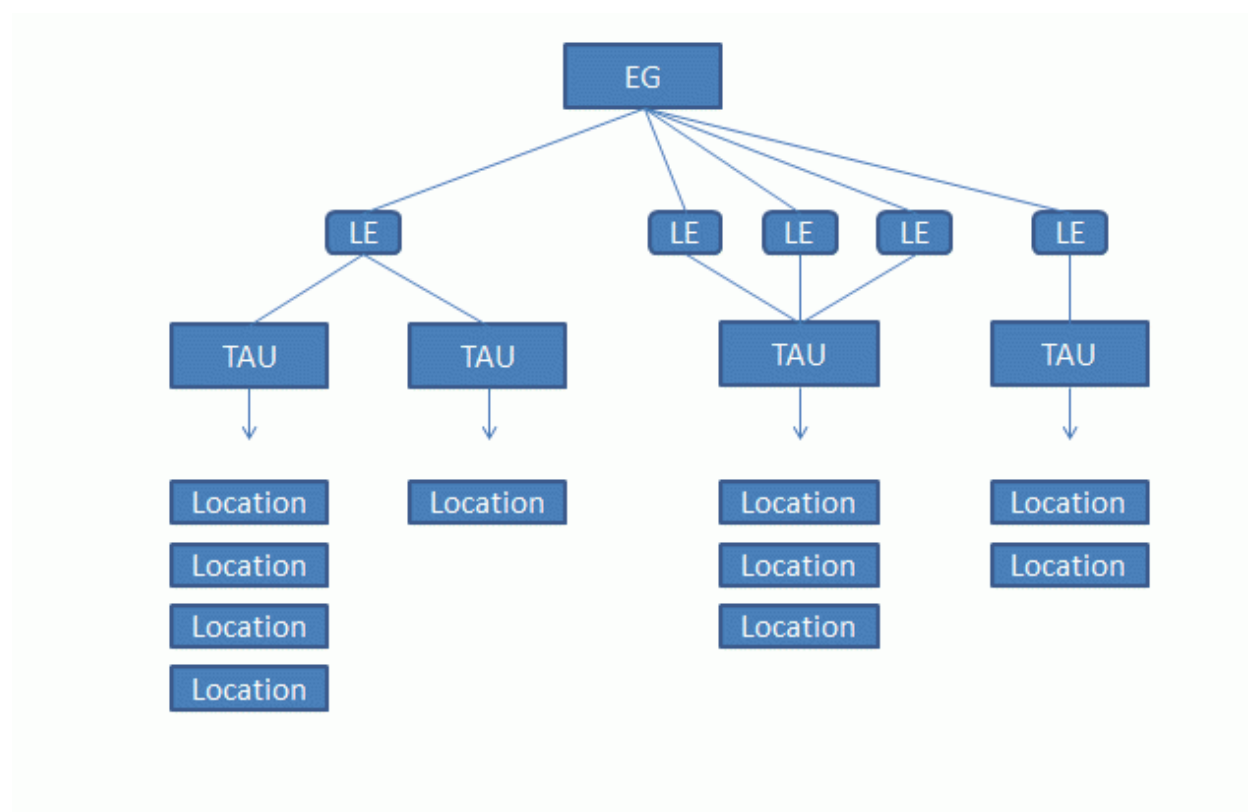
- Legal Entities (LEs)
- Type of Activity Units (TAUs)
- Location Units.

20 The EG and LE are institutional units and the TAU and Location are producing units.

21 The LE and the TAU are the main institutional and producing units used by the ABS to produce statistical outputs.

22 Diagram 1 illustrates the nature of the relationships between the different units within the model.

Diagram 1 - ABS economic units model*



* The legal entity (LE) statistical unit is generally equivalent to a single Australian Business Number registration

Unit definitions

23 The Legal Entity (LE) is an institutional unit covering all the operations in Australia of an entity which possesses some or all of the rights and obligations of individual persons or corporations, or which behaves as such in respect of those matters of concern for economic statistics. Examples of legal entities include companies, partnerships, trusts, sole (business)

proprietorships, government departments and statutory authorities. Legal entities are institutional units. In most cases the LE is equivalent to a single Australian Business Number (ABN) registration.

24 The Enterprise Group (EG) is an institutional unit that covers all the operations within Australia's economic territory of legal entities under common control. Control is defined in Corporations legislation. Majority ownership is not required for control to be exercised.

25 The Type of Activity Unit (TAU) comprises one or more legal entities, sub-entities or branches of a legal entity that can report productive and employment activities. TAUs are created if accounts sufficient to approximate Industry Value Added (IVA) are available at the Australian and New Zealand Standard Industrial Classification (ANZSIC) subdivision level.

26 A Location is a producing unit comprised of a single, unbroken physical area from which an organisation is engaged in productive activity on a relatively permanent basis, or at which the organisation is undertaking capital expenditure with the intention of commencing productive activity on a relatively permanent basis at some time in the future.

Classification of units

27 Various classifications are applied to the units in the ABS Economic Units Model. The main classifications applied are:

- ANZSIC
- Type of Legal Organisation (TOLO)
- Type of Business Entity (TOBE)
- Standard Institutional Sector Classification of Australia (SISCA)
- Public / Private classification

28 ANZSIC is used to classify the industry in which the TAU has productive activity. Further information on this classification can be found in [Australian and New Zealand Standard Industrial Classification \(ANZSIC\), 2006 \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0) (cat. no.1292.0).

29 SISCA provides a framework for dividing the Australian economy into institutional sectors. Further information on this classification can be found in [Standard Economic Sector Classifications of Australia \(SESCA\), 2008 \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/1218.0\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1218.0) (cat. no.1218.0).

ABS business register

30 The ABSBR is a list of businesses and organisations operating in Australia and is based on the Australian Business Register (ABR). Organisations are included on the ABR when they register for an ABN. The Commonwealth Government requires all government departments and agencies to make use of the ABR to reduce government imposed reporting load, and to use the ABN as the primary reference number for all dealings between government and business. The ABSBR is used to create frames for the various business surveys run by the ABS.

31 The results of these statistics are based, in part, on ABR data supplied by the Registrar to the ABS under A New Tax System (Australian Business Number) Act 1999 which requires that such data is only used for the purpose of carrying out functions of the ABS. No individual information collected under the Census and Statistics Act 1905 is provided back to the Registrar for administrative or regulatory purposes. Any discussions of data limitations or weaknesses is in the context of using the data for statistical purposes, and is not related to the ability of the data to support the ABR's core operational requirements. Legislative requirements to ensure privacy and secrecy of the data have been followed. Only people authorised under the Australian Bureau of Statistics Act 1975 have been allowed to view data about any particular firm in conducting this survey. In accordance with the Census and Statistics Act 1905, results have been confidentialised to ensure that they are not likely to enable identification of a particular person or organisation.

32 It is not practicable for the ABS Economic Units Model to be applied to all ABR registrants and is therefore organised into two parts: the profiled population, and the non-profiled population.

33 Profiled Population: Businesses and other organisations which are considered sufficiently complex and significant, are profiled according to the Economic Units Model. These enterprise groups typically have multiple legal entities, multiple TAUs and are among the largest contributors within industries.

34 Non-Profiled population: Businesses and other organisations with less complex structures. They are regarded as an enterprise group with a single legal entity and a single TAU in accordance with the Economic Units Model. Information for units in the non-profiled population is largely sourced from the ABR.

35 The two populations are mutually exclusive and cover all organisations in Australia which have registered for an ABN.

General notes on estimates

36 AWE statistics represent average gross (before tax) earnings of employees and do not relate to average award rates or to the earnings of the 'average person'. AWE estimates are

derived by dividing estimates of weekly total earnings by estimates of the number of employees. Changes in the averages may be affected not only by changes in the level of earnings of employees but also by changes in the overall composition of the wage and salary earner segment of the labour force.

37 There are several factors which can contribute to compositional changes, including variations over time in the proportions of full-time, part-time, casual and junior employees; variations in the occupational distribution within and across industries; and variations in the distribution of employment between industries. Such effects may apply differently within different states and territories, and over time.

38 AWE statistics closely follow the International Labour Organisation's concept of 'Statistics of average earnings'. The data is collected in respect of a typical week and, therefore, may not reflect events such as Christmas trading. Further, the data excludes irregular and infrequent payments, such as annual bonuses. For these reasons, caution is advised if using AWE to derive annualised average earnings.

39 Prior to May 2014, surprise outliering was used as the sole methodology to identify and reduce the impact on the estimates of a business whose weighted survey response is an outlier i.e significantly different to businesses in a group with similar characteristics (based on employment size, state and industry). Surprise outliering involves treating the identified outlier as if it were the only extreme unit in the group's population. The outlier is given a weight of one and the weights of the other units in the group are adjusted upwards accordingly.

40 In the May 2014 issue, winsorisation methodology was introduced as the primary method to treat outliers in AWE. Winsorisation moderates the impact of an outlier business without the harsh impact of the surprise outliering approach. This improved methodology provides more stable time series estimates. Surprise outliering continues to be used for a small number of extreme values that may not be sufficiently moderated by the winsorisation method.

41 An analysis of the May 2014 estimates was undertaken to identify the impact on the estimates of the change in methodology. At the Australia level the impact of the change was found to be minimal. However, for some data items in some industries and states there is an impact on the estimates. For further information on outliers, refer to Chapter 17 of [Labour Statistics: Concepts, Sources and Methods \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.0.55.001\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.0.55.001) (cat. no. 6102.0.55.001).

42 For further information in understanding Average Weekly Earnings statistics, please refer to the feature article [A Guide to Understanding Average Weekly Earnings Statistics](#)

(<https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/6302.0main+features8Nov%202014>), published in the November 2014 AWE release.

Average weekly cash earnings

43 The definition of earnings currently used in the AWE survey is, broadly, current and regular payments in cash to employees for work done. Thus, earnings series from the AWE survey historically excluded amounts salary sacrificed, as these had been considered conceptually as payments in kind. However, under the revised conceptual framework for measures of employee remuneration, as presented in [Information Paper: Changes to ABS Measures of Employee Remuneration](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6313.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6313.0>) (cat. no. 6313.0), amounts salary sacrificed are now considered conceptually to be wages and salaries in cash. Accordingly, the AWE questionnaire was redesigned and, from August 2007, the collection of information on amounts salary sacrificed by employees commenced. However, the AWE series has continued to be published on the old conceptual basis (i.e. exclusive of amounts salary sacrificed) to maintain long term comparability of the time series.

44 Although the AWE survey has conceptually excluded amounts salary sacrificed, in practice, there was evidence that earnings series from the AWE survey had inadvertently included some amounts salary sacrificed. The ABS worked closely with data providers to identify any instances of mis-reporting, and to amend their reporting practices where necessary.

45 As a result of the separate collection of salary sacrificed amounts from August 2007, and other analyses, the ABS was able to quantify the extent of mis-reporting that had occurred, and to estimate the impact of this mis-reporting on the historical series. Consequently, AWE data series for August 1996 through to May 2008 were revised to exclude all amounts salary sacrificed. For further information see [Information Paper: Revisions to the Average Weekly Earnings Series](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.001) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.001>) (cat. no. 6302.0.55.001) released 11 November 2008.

46 Since the May 2011 edition of this publication, Average Weekly Cash Earnings (AWCE) series have also been released as additional (not replacement) AWE series. The difference between the AWCE and the AWE series is the average weekly amount salary sacrificed. Data relating to the AWCE series are available in the data cubes on the Data downloads section. For more information relating to the AWCE series, refer to the [Information Paper: Release of Average Weekly Cash Earnings Series](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.003) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.003>) (cat. no. 6302.0.55.003) and for broad level analysis and findings refer to the [Information Paper: Changes to Average Weekly Earnings, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.002) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0.55.002>) (cat. no. 6302.0.55.002).

Comparability of series

47 The current AWE series, based on information obtained from a sample survey of employers, was introduced in August 1981. Prior to September 1981, the AWE series was based principally on information from payroll tax returns. Revised estimates of AWE for the period August 1981 to November 1983 were included in [Average Weekly Earnings, States and Australia, March 1984](https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6302.0Main+Features1Mar%201984?OpenDocument) (https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6302.0Main+Features1Mar%201984?OpenDocument) (cat. no. 6302.0) published on 12 July 1984 and available on the ABS website. Users who need a measure of the movement in earnings for a period which spans both the payroll tax based and employer survey series should refer to Table 3 in that publication which presents both series linked to a common index base (August 1981 = 100.0).

Changes to time series spreadsheets

48 From the May 2015 issue, all time series identifiers used in the Average Weekly Earnings spreadsheets (i.e. table 1 to 14H) changed, as highlighted in the Information Paper: Average Weekly Earnings, Australia: Upcoming Changes to Time Series Spreadsheets (cat. no. 6302.0.55.004), issued on 14 May 2015.

Estimates of movement in AWE

49 AWE is designed to provide estimates of the level of average earnings at a point in time and, while not designed for movements in earnings, the frequency of collection supports a time series of these level estimates. Data on the average level of earnings are useful for providing a level benchmark to compare a specific amount to an average level of earnings (for example, what an individual earns compared to the average).

50 As the primary purpose of AWE is to estimate the level of average earnings in Australia, the standard errors for the period-to-period movements are much higher proportionally than for the level estimates. Estimates of movement should be interpreted with this in mind. An alternative source for estimates of movements in the price of wages in Australia is the [Wage Price Index, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0) (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0) (cat. no. 6345.0) (see paragraphs 51-56).

Comparability with wage price index

51 Period-to-period movements for the AWE series are not comparable with those for the Wage Price Index (WPI). It is important to recognise that the two series have different purposes and concepts and use different sample selection and estimation methodologies.

52 The AWE survey is designed to measure the level of average earnings in Australia at a point in time. It does this by obtaining data from selected businesses on the total earnings

paid to their employees and the total number of employees in the business, for a specific pay period. Together, this data is used to derive the mean, or average, earnings. These sample data are then weighted to provide estimates for the whole population of in scope businesses.

53 The WPI is a price index designed to measure the change over time in the price of wages and salaries. It does this by pricing specific jobs, in terms of wage and salary payments to employees occupying the jobs, and collecting information from businesses each quarter on price changes in those jobs. It is unaffected by changes in the quality and quantity of labour services purchased by employers.

54 In addition to changes in the price of labour, AWE estimates are affected by changes in hours worked and by compositional changes in the employee workforce (see paragraphs 36 and 37). The WPI prices a fixed quantum of labour services for each job and, hence, changes to base earnings resulting from increases in hours worked or from changes in the composition of the employee workforce will not be reflected in the index.

55 For further information on comparability between AWE and WPI, please refer to the feature article [Average Weekly Earnings and Wage Price Index - What do they measure?](https://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/6302.0Main%20Features9May%202014?opendocument&tabname=Summary&prodno=6302.0&issue=May%202014&num=&view=) (<https://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/6302.0Main%20Features9May%202014?opendocument&tabname=Summary&prodno=6302.0&issue=May%202014&num=&view=>) published in the May 2014 AWE release.

56 For further information on the WPI, please refer to the Explanatory Notes of [Wage Price Index, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0>) (cat. no. 6345.0) and [Wage Price Index: Concepts, Sources and Methods](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6351.0.55.001) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6351.0.55.001>) (cat. no. 6351.0.55.001) which are available on the ABS web site.

Alternative ABS earnings data

57 Information about wages and salaries paid to employees is used for many purposes including economic analysis, social research, policy formation and evaluation, and research by employer and employee associations. In addition to AWE, the ABS publishes a variety of other information on wages and salaries (generally referred to as 'earnings'), from both household and employer surveys. For further information on these other sources, please refer to the feature article [Understanding Earnings in Australia Using ABS Statistics](https://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/6310.0Main%20Features5August%202013?opendocument&tabname=Summary&prodno=6310.0&issue=August%202013&num=&view=) (<https://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/6310.0Main%20Features5August%202013?opendocument&tabname=Summary&prodno=6310.0&issue=August%202013&num=&view=>) published in [Employee Earnings](#),

[Benefits and Trade Union Membership, Australia \(https://www.abs.gov.au/ausstats/abs@.nsf/mf/6310.0\)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6310.0) (cat. no. 6310.0).

Effects of rounding

58 Estimates of average weekly earnings are rounded to the nearest 10 cents.

59 Estimates of percentage change have been calculated using unrounded estimates and may be different from, but are more accurate than, movements obtained from calculating percentage changes using the rounded estimates presented in this publication.

Seasonal adjustment

60 Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences can be more clearly recognised. Seasonal adjustment does not aim to remove the irregular or non-seasonal influences which may be present in any particular series. Influences that are volatile or unsystematic can still make it difficult to interpret the movement of the series even after adjustment for seasonal variation. If a time series has no identifiable seasonality it is not seasonally adjusted.

61 In 2012, as part of the transition from a quarterly to a biannual frequency, the ABS conducted an assessment of seasonality in the biannual AWE series. Based on the information available at the time, it was determined that moving to a biannual frequency eliminated seasonality for most AWE series and for these series the seasonally adjusted estimate was set to exactly equal to the original estimate. Subsequent reviews into the seasonality of biannual AWE series have shown there is seasonal behaviour in some series that previously had no seasonal adjustment. For these series, seasonal factors are now applied to adjust the original estimate. There are other series for which seasonal adjustment is no longer applied because the seasonal behaviour previously assumed has now been assessed as insignificant. For these series the seasonally adjusted estimate will now equal the original estimate.

62 The biannual seasonally adjusted series, commencing November 2012, uses the ABS's existing quarterly seasonal adjustment method. For the purpose of seasonal adjustment, linear interpolation is used to impute "missing" quarterly original observations based on the succeeding and preceding survey estimates. In this way a quarterly original data series is synthesised from the actual biannual data collected. These synthesised estimates are used in the seasonal adjustment process and are not released. The concurrent seasonal adjustment technique is used to estimate seasonal factors from this quarterly synthesised original data.

63 Under concurrent seasonal adjustment, the estimates of seasonal factors are improved as new or revised original estimates become available each period. However, for this collection, the seasonally adjusted estimates up to May 2012, presented in the May 2012 edition, will not be revised as they were based on actual quarterly observations, whereas those after that point are based on biannual observations.

Trend estimates

64 Seasonally adjusted estimates can be smoothed to reduce the impact of irregular or non-seasonal influences. Smoothed seasonally adjusted series are called trend estimates.

65 The ABS considers that trend estimates provide a more reliable guide to the underlying direction of the original estimates and are more suitable than either the seasonally adjusted or original estimates for most business decisions and policy advice.

66 The trend estimates in this publication, obtained by dampening out the irregular component from the seasonally adjusted series, are calculated using a centred 7-term Henderson moving average of the seasonally adjusted estimates of quarterly synthesised original data. Estimates for the three most recent periods cannot be calculated using this centred average method; instead an asymmetric average is used. The changes to the moving average formulae can lead to revisions in the trend as data for subsequent periods becomes available. Revisions to the original data and re-estimation of seasonal adjustment factors also cause revisions to trend estimates. If a series is highly volatile then the trend estimates will be subject to greater revision for the latest few observations as new data become available. However, it is important to note that this does not make the trend series inferior to the seasonally adjusted or original series.

67 Please note that calculating seasonally adjusted and trend estimates on the synthesised quarterly series resulted in a slight change in the level of the data. When the new series were implemented, the change in the level of data was calculated against historic data. At the Australia level, the maximum differences for full-time adult male average weekly ordinary time earnings between estimates based on the two frequencies were \$4.20 in the trend series and \$4.60 in the seasonally adjusted series. Over the length of the series the mean differences were \$0.48 for the trend series and \$0.76 for the seasonally adjusted series.

68 Those users seeking historical seasonally adjusted and trend estimates will be required to access past AWE editions, which are available on the ABS website. It is advised that seasonally adjusted and trend estimates produced before and after the May 2012 edition are not directly comparable and these historical series before the May 2012 edition will not be produced from less frequent biannual observations.

69 The privatisation of Telstra Corporation in November 2006 impacted on the private sector and public sector AWE series. For the purposes of ABS statistics, this change from public sector to private sector was effective from March quarter 2007. The effect of this change was significant for both the private sector and public sector series. As a result, a trend break was applied to both series between November 2006 and February 2007. For more information please see [Information Paper: Future Treatment of Telstra in ABS Statistics, 2007](https://www.abs.gov.au/ausstats/abs@.nsf/mf/8102.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/8102.0>) (cat. no. 8102.0), released 26 February 2007.

70 For further information, see [A Guide to Interpreting Time Series - Monitoring Trends](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1349.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/1349.0>) (cat. no. 1349.0).

Related publications

71 The following publications contain related information:

- [Average Weekly Earnings, Australia](https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6350.01941-1990) (<https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6350.01941-1990>) (cat. no. 6350.0);
- [Jobs in Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6160.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6160.0>) (cat. no. 6160.0);
- [Employee Earnings and Hours, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6306.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6306.0>) (cat. no. 6306.0)-issued biennially;
- [Characteristics of Employment, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6333.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6333.0>) (cat. no. 6333.0);
- [Employment and Earnings, Public Sector, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6248.055.002) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6248.055.002>) (cat. no. 6248.055.002)-issued annually;
- [Estimates of Personal Income for Small Areas](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6524.055.002) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6524.055.002>) (cat. no 6524.055.002);
- [Gender Indicators, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/4125.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/4125.0>) (cat. no. 4125.0)-issued biannually;
- [Labour Force, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6202.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6202.0>) (cat. no. 6202.0)-issued monthly;
- [Labour Statistics: Concepts, Sources and Methods](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.055.001) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.055.001>) (cat. no. 6102.055.001); and
- [Wage Price Index, Australia](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0) (<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0>) (cat. no. 6345.0)-issued quarterly.

Technical note - sampling error

Reliability of estimates

1 As the estimates in this release are based on information relating to a sample of employers, rather than a full enumeration, they are subject to sampling variability. That is, they may differ from the estimates that would have been produced if the information had been obtained from all employers. This difference, called sampling error, should not be confused with inaccuracy that may occur because of imperfections in reporting by respondents or in processing by the ABS. Such inaccuracy is referred to as non-sampling error and may occur in any enumeration whether it be a full count or a sample. Efforts have been made to reduce non-sampling error by careful design of questionnaires, detailed checking of returns and quality control of processing.

2 The sampling error associated with any estimate can be estimated from the sample results. One measure of sampling error is given by the standard error which indicates the degree to which an estimate may vary from the value which would have been obtained from a full enumeration (the 'true value'). There are about two chances in three that a sample estimate differs from the true value by less than one standard error, and about nineteen chances in twenty that the difference will be less than two standard errors. Standard errors are provided in tables 3, 6, 9, 10 and 13 to 17.

3 An example of the use of a standard error is as follows. If the estimated average earnings were \$1,100.00 with a standard error of \$7.00, then there would be about two chances in three that a full enumeration would have given an estimate in the range \$1,093.00 to \$1,107.00 and about nineteen chances in twenty that it would be in the range \$1,086.00 to \$1,114.00.

4 Another measure of the sampling error is the relative standard error, which is obtained by expressing the standard error as a percentage of the estimate.

Glossary

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Adult employees

Adult employees are those employees 21 years of age or over and those employees who, although under 21 years of age, are paid at the full adult rate for their occupation.

Average weekly cash earnings

Average weekly cash earnings represents average gross (before tax) earnings of employees, inclusive of salary sacrifice. Average weekly cash earnings differs from average weekly

earnings by the average weekly amount salary sacrificed.

Average weekly earnings

Average weekly earnings statistics represent average gross (before tax) earnings of employees and do not relate to average award rates nor to the earnings of the 'average person'. Estimates of average weekly earnings are derived by dividing estimates of weekly total earnings by estimates of number of employees.

Employees

Employees refer to all wage and salary earners (as defined in paragraphs 4 and 5 of the Explanatory Notes) who received pay for any part of the reference period.

Full-time employees

Full-time employees are permanent, temporary and casual employees who normally work the agreed or award hours for a full-time employee in their occupation and received pay for any part of the reference period. If agreed or award hours do not apply, employees are regarded as full-time if they ordinarily work 35 hours or more per week.

Reference period

The reference period for the survey is the last pay period ending on or before the third Friday of the middle month of the reference quarter. Where a pay period is fortnightly or monthly, etc., the employer is requested to report only one week's proportion.

Salary sacrifice

Salary sacrifice is defined as an arrangement where an employee agrees to forgo part of their pre-tax salary in return for benefits. Common types of salary sacrifice arrangements include pre-tax contributions to superannuation funds and novated leases for motor vehicles.

Sector

Public sector includes all local government authorities and government departments, agencies and authorities created by, or reporting to the Commonwealth and State parliaments. All remaining employees are classified as private sector.

Weekly ordinary time earnings

Weekly ordinary time earnings refers to one week's earnings of employees for the reference period, attributable to award, standard or agreed hours of work. It is calculated before taxation and any other deductions (e.g. superannuation, board and lodging) have been made. Included in ordinary time earnings are award, workplace and enterprise bargaining

payments, and other agreed base rates of pay, over-award and over-agreed payments, penalty payments, shift and other allowances, commissions and retainers, bonuses and similar payments related to the reference period, payments under incentive or piecework, payments under profit sharing schemes normally paid each pay period, payment for leave taken during the reference period, all workers' compensation payments made through the payroll, and salary payments made to directors. Excluded are amounts salary sacrificed, non-cash components of salary packages, overtime payments, reimbursements to employees for travel, entertainment, meals and other expenditure incurred in conducting the business of their employer, and other payments not related to the reference period. Also excluded are employer superannuation contributions (e.g. the 9.5% superannuation guarantee).

Weekly total earnings

Weekly total earnings of employees is equal to weekly ordinary time earnings plus weekly overtime earnings.

Quality declaration

Institutional environment

For information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see [ABS Institutional Environment \(https://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/10ca14cb967e5b83ca2573ae00197b65!OpenDocument\)](https://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/10ca14cb967e5b83ca2573ae00197b65!OpenDocument).

Relevance

The biannual Survey of Average Weekly Earnings (AWE) is designed to produce estimates of the level of average gross weekly earnings associated with employee jobs in Australia, at a point in time. While AWE is not designed for movement in earnings, the frequency of collection supports a time series of these level estimates. In practice, AWE is used for estimates of both the level of earnings and movement in earnings; level estimates and estimates of movement in AWE are linked to both state and federal legislation for adjusting a variety of government payments. AWE data are also used for analysing average earnings, framing and supporting wage claims/submissions, monitoring wage equity and developing taxation and social policies.

The key earnings series produced from the survey are:

- full-time adult ordinary time earnings (commonly referred to as AWOTE);
- full-time adult total earnings;
- all employees total earnings.

Each of the above series is available for males, females and persons. Estimates are available by state/territory, industry and sector. Seasonally adjusted, where there is observed seasonality, and trend estimates are produced for key series. Cash series estimates, which are inclusive of amounts salary sacrificed, are also available.

Timeliness

AWE is produced for the June and December quarters. The reference period for the survey is the last pay period ending on or before the third Friday of the middle month of the reference quarter (i.e. May and November). Where a pay period is fortnightly or monthly, etc., the employer is requested to report only one week's proportion.

Prior to 2012, Average Weekly Earnings was conducted on a quarterly basis. The frequency of the AWE survey was changed to biannual with effect from the 2012/13 financial year. The May 2012 publication was the last quarterly issue and the November 2012 the first produced on a biannual basis.

AWE estimates are released approximately 13 weeks after the reference date for the May edition and 14 weeks after the reference date for the November edition due to the Christmas and New Year period.

Accuracy

Information for the AWE survey is collected via web form questionnaires which are distributed to approximately 5,500 employers. The population of employers is stratified by state, sector, industry division and employment size to ensure adequate state, sector and industry representation. The target minimum response rate is 91%.

There are two principal sources of error in surveys, sampling error and non-sampling error. Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise non-sampling error by the careful design and testing of questionnaires, detailed checking of the reported data and direct follow up with providers where significant errors are detected.

Sampling error occurs when a sample or subset of the population is surveyed rather than the entire population. One measure of the likely difference resulting from not including all of the population in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if the whole population had been included in the survey.

As the primary purpose of AWE is to estimate the level of average earnings in Australia, the standard errors for period-to-period movements are much higher proportionally than for level estimates. Estimates of movement should be interpreted with this in mind.

AWE estimates are seasonally adjusted to remove the estimated effects of normal seasonal variation from the series. The seasonally adjusted series are further smoothed to reduce the impact of irregular or non-seasonal factors. Smoothed seasonally adjusted series are called trend estimates. As data becomes available for the next period there are usually revisions in the seasonally adjusted and trend estimates for the previous periods.

The ABS considers that trend estimates provide a more reliable guide to the underlying direction of the original estimates and are more suitable than either the seasonally adjusted or original estimates for most business decisions and policy advice.

Coherence

The current AWE series, based on information obtained from a sample survey of employers, was introduced in August 1981. Prior to August 1981 the AWE series was based primarily on information from payroll tax returns.

Data collection methodology has been improved over time, including survey definitions and sample design. Seasonally adjusted estimates were introduced in 1983 and trend estimates were introduced in 1993.

The AWE survey uses Australian standard classifications to facilitate data comparability across statistical series. From the August 2009 issue of the AWE publication, data is presented using the 2006 edition of the Australian and New Zealand Standard Industrial Classification (ANZSIC). The 2006 edition of ANZSIC was developed to provide a more contemporary industrial classification system, taking into account issues such as changes in the structure and composition of the economy, changing user demands and compatibility with major international classification standards.

Industry data from August 2009 is only available on an ANZSIC 2006 basis. Published industry series were backcast and data from August 1994 to May 2009 are available on the ABS website on the basis of both the 2006 edition and the previous [1993 edition of ANZSIC](#)

(<https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/E05F0987CD26ABF0CA257122001AC9BC?opendocument>).

The ABS conducts a number of sample surveys of businesses which collect information about wages and salaries. One of these, the Wage Price Index, is designed to measure the change over time in the price of wages and salaries. Period-to-period movements for the AWE series are not comparable with those for the Wage Price Index as the two series have different purposes and concepts and use different sample selection and estimation methodologies. For further information on comparability between AWE and WPI, refer to the feature article [Average Weekly Earnings and Wage Price Index - What do they measure?](https://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/6302.0Main%20Features9May%202014?opendocument&tabname=Summary&prodno=6302.0&issue=May%202014&num=&view=) (<https://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/6302.0Main%20Features9May%202014?opendocument&tabname=Summary&prodno=6302.0&issue=May%202014&num=&view=>) published in the May 2014 AWE issue.

Interpretability

Average weekly earnings statistics represent average gross earnings of employees and do not relate to average award rates nor to the earnings of the 'average person'. Changes in the averages may be affected not only by changes in the level of earnings of employees, but also by changes in the overall composition of the wage and salary earner segment of the labour force.

There are several factors which can contribute to compositional changes, including variations over time in the proportions of full-time, part-time, casual and junior employees; variations in the occupational distribution within and across industries; variations in the distribution of employment between industries; and variations in the proportion of male and female employees. Such effects may apply differently within different states and territories, and over time.

AWE statistics closely follow the International Labour Organisation's concept of 'Statistics of average earnings'. The data is collected in respect of a typical week and, therefore, may not reflect events such as Christmas trading. Further, the data excludes irregular and infrequent payments, such as annual bonuses. For these reasons, caution is advised if using AWE to derive annualised average earnings.

For further information on understanding Average Weekly Earnings statistics, please refer to the feature article [A Guide to Understanding Average Weekly Earnings Statistics](https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/6302.0main+features8Nov%202014) (<https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/6302.0main+features8Nov%202014>), published in the November 2014 release.

Average Weekly Earnings, Australia (cat. no. 6302.0) contains Explanatory Notes, a Glossary

and a Technical Note which provide further information about data sources, terminology and other technical aspects of the series.

Accessibility

Average Weekly Earnings, Australia (cat. no. 6302.0) is available electronically from the ABS website and includes downloadable Excel data files for time series data.

Abbreviations

Show all

ABN	Australian Business Number
ABR	Australian Business Register
ABS	Australian Bureau of Statistics
ABSB	Australian Bureau of Statistics Business Register
ANZSIC	Australian and New Zealand Standard Industrial Classification
ARIMA	Autoregressive Integrated Moving Average
ATO	Australian Taxation Office
AWCE	Average Weekly Cash Earnings
AWE	Average Weekly Earnings
EG	Enterprise Group
LE	Legal Entity
PAYGW	Pay-As-You-Go Withholding
SISCA	Standard Institutional Sector Classification of Australia
TAU	Type of Activity Unit
TOBE	Type of Business Entity
TOLO	Type of Legal Organisation
WPI	Wage Price Index